REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 2-42, 44 and 45 are pending in the present application Claims 4, 5, 8, 9, 18, 27, 32, 36, 42, 44 and 45 are amended by the present amendment. Support for the foregoing amendments can be found in the claims as originally filed. Thus, no new matter is added.

In the outstanding Office Action, Claims 18, 36 and 42 were rejected under 35 U.S.C. §101; Claims 4, 5, 8, 9, 27 and 32 were rejected as including informalities; Claims 2-9, 11-13, 23, 44 and 45 were rejected under 35 U.S.C. §102(b) as anticipated by Pachet (Constraint-Based Spatialization, Sony Computer Science Lab); Claims 10, 14-17, 21, 24-26, 28, 31, 36-39 and 41 were rejected under 35 U.S.C. §103(a) as unpatentable over Pachet in view of Lydecker et al. (U.S. Pat. App. No. 2003/0028273, herein "Lydecker"); Claims 18, 32 and 42 were rejected under 35 U.S.C. §103(a) as unpatentable over Pachet in view of O'Connell (U.S. Pat. No. 5,331,111); Claims 19, 20 and 22 were rejected under 35 U.S.C. §103(a) as unpatentable over Pachet in view of O'Connell in further view of Bargen, B. et al. ("Inside DirectX", Microsoft Press, Redmond, WA, 1998, herein "Bargen"); Claims 27, 29 and 30 were rejected under 35 U.S.C. §103(a) as unpatentable over Pachet in view of Lydecker in further view of Bargen; Claim 33 was rejected under under 35 U.S.C. §103(a) as unpatentable over Pachet in view of Lydecker in further view of O'Connell; and Claims 34, 35 and 40 were rejected under 35 U.S.C. §103(a) as unpatentable over Pachet in view of Lydecker and O'Connell in further view of Bargen.

With respect to the rejection of Claims 18, 36 and 42 under 35 U.S.C. §101 as directed to non-statutory subject matter, Applicants have amended Claims 18, 36 and 42 to recite a computer readable medium. Accordingly, Applicants respectfully request that the rejection of Claims 18, 36 and 42 under §101, be withdrawn.

With respect to the objection to Claims 4, 5, 8, 9, 27 and 32 as including informalities, these claims have been amended to overcome the objections. Accordingly, Applicants respectfully request that the objection to Claims 4, 5, 8, 9, 27 and 32 be withdrawn.

Before turning to the outstanding prior art rejections, it is believed that a brief review of the recited invention would be helpful.

The present invention describes a system for controlling an audio spatialisation in real time. In a non-limiting example, shown in Figure 1, the system includes a storage unit that stores audio streams composed of a plurality of audio sources associated to audio tracks, the audio tracks each including a signal representative of an analog sound signal.[1] The system also includes a constraint solver that receives and processes constraints expressing rules for a spatialisation of the audio stream[2] and an interface used to enter spatialisation commands to the constraint solver.[3] Figure 4 shows a non-limiting example of the interface.

The exemplary interface allows users to decide where audio sources will be located with respect to the user. Additionally, the interface allows the user to effect a grouped spatialisation command in which the spatialisation command works on a group of audio sources. This group of audio sources is then processed in the constraint solver as a unitary object for the application of constraint variables. Further, the user can displace one or a number of presented groups of audio sources through collective commands.

Applicants respectfully traverse the §102(b) rejection of 2-9, 11-13, 23, 44 and 45 based on Pachet for the following reasons.

Amended Claim 44 recites, in part,

> a display configured to display graphical representations of a plurality of audio sources;
> an input unit configured to access an audio stream composed of the plurality of audio sources associated to audio

[1] Figure 1.
[2] Specification, Page 1, first paragraph.
[3] Figure 4.

> tracks, the audio tracks each including a signal representative of an analog sound signal;
>
> a constraint unit configured to receive and process constraints expressing rules for a spatialisation of said audio stream; and
>
> an interface unit configured to enter spatializing commands to said constraint unit,
>
> wherein said interface unit enters at least one user input for effecting a spatialisation command on one audio source in a group of two or more audio sources,
>
> the spatialisation command is effected on the audio sources based on the position of the graphical representation of the audio sources on the display,
>
> said constraint unit is programmed to process said group of two or more audio sources as a unitary object for the application of the constraints, and
>
> when a user moves the position of one audio source in said group of two or more audio sources, an algorithm sets the position on the display for the other audio sources in the group of two or more audio sources based on the constraints.

Claim 45 recites similar features.

Pachet describes a music spatialisation application used within the MIDI context. Specifically, Pachet is the basis for the EP0961523 reference discussed on page 2, line 8 to page 3, line 14 of the present specification.

However, the Pachet publication focuses only on the handling of MIDI tracks, which cannot be considered as audio streams. Particularly as the audio streams recited in Claim 44 are recited as being composed of the plurality of audio sources associated to audio tracks, the audio tracks each including ***a signal representative of an analog sound signal***.

Whereas a MIDI track only includes a succession of notes to be played by MIDI instruments (in other words a digital representation of a musical score), the audio stream recited in Claim 44, includes a representation of an analog signal to be rendered. Thus, the audio stream does not provide the digital information necessary to derive a score usable by an MIDI instrument and a MIDI instrument cannot handle an analog audio stream. Thus, a system designed to use MIDI tracks is not equivalent to a system that uses audio streams.

Further, Claim 44 recites a constraint unit configured to receive and process constraints expressing rules for a spatialisation of said audio stream, the constraint unit programmed to process the group of two or more audio sources as a unitary object for the application of the constraints. Additionally, when a user moves the position of one audio source in said group of two or more audio sources, an algorithm sets the position on the display for the other audio sources in the group of two or more audio sources based on the constraints.

However, neither the cited portions, nor in any other portion of the Pachet reference, describes the above noted feature. Specifically, Pachet only describes the setting of a constraint on several objects individually, not the application of a constraint to a group of objects considered as unitary.

In Figure 2 of Pachet, the ball linked to the instruments is a constraint, not the definition of a group for applying further common constraints or motions. In addition, Pachet fails to teach in §3 that moving one instrument will also move another object. Each instrument in Pachet is in fact sill considered as an independent unitary object for the application of the constraint. Thus, in contrast to the invention recited in Claim 44, moving one of the three instruments in Figure 2 of Pachet will not change the position of the other audio sources on which this constraint is set. This fact is highlighted in that the two balls (one is linked with the small circle while the other is linked with the big circle) are only linked to a single instrument (the bass and piano respectively) and not to a group of instruments that may be moved in common. Such further constraints are not applied on the three instruments, which illustrates that these three instruments are not handled as unitary objects for applying the constraints.

Thus, in Claim 44 when a user moves the position of one audio source in said group of two or more audio sources, an algorithm sets the position on the display for the other audio

sources in the group of two or more audio sources based on the constraints, this feature does not exist in the Pachet reference.

Accordingly, Applicants respectfully submit that independent Claim 44 and similarly Claim 45 and claims depending therefrom patentably distinguish over Pachet.

Moreover, with respect to the further dependent claims, in light of the above discussion, Applicant respectfully submits that those claims also distinguish over the applied art, particularly as none of these further cited teachings to Lydecker, O'Connell and Bargen are believed to overcome the above-noted deficiencies of Pachet.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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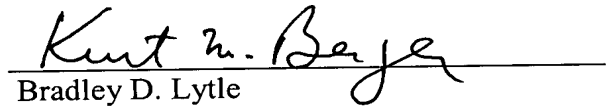

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